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Dated: March 6, 2008

Electronic Signature for Linda D. Kennedy: /Linda D. Kennedy/

Docket No.: 65765-0085
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Chin-Jui Chang et al.

Application No.: 10/759,449

Confirmation No.: 7829

Filed: January 16, 2004

Art Unit: 1772

For: SOUND DEADENING AND STRUCTURAL
REINFORCEMENT COMPOSITIONS AND
METHODS OF USING THE SAME

Examiner: M. A. Patterson

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

This Appeal is from the Final Rejection of claims 1-27 set forth in the Final Office

Action dated September 7, 2007. A Notice of Appeal was filed November 7, 2007.

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal is: Sika Corporation, assignee, a corporation organized and existing under the laws of the state of New Jersey, and having a place of business at 30800 Stephenson Highway, Madison Heights, Michigan 48071.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 27 claims pending in application.

B. Current Status of Claims

Claims 1-27 are finally rejected by the Office Action dated September 7, 2007.

C. Claims On Appeal

Claims 1-27 are on appeal.

IV. STATUS OF AMENDMENTS

Appellant did not file an Amendment After Final Rejection. The Amendment dated December 27, 2005 has been entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The following is a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, as required by 37 C.F.R. § 41.37(c)(1)(v).

References to the specification herein are intended to be exemplary and not limiting. There are four independent claims described herein: claims 1, 11, 12 and 13.

Independent claim 1 describes a composition that is useful for forming a reinforcing body. *See* specification page 1, lines 10-25; page 2, lines 7-15. In particular, claim 1 describes a composition that includes the following ingredients: (a) from about 20-30% by weight of an SBS block co-polymer; (b) from about 5-20% by weight polystyrene; (c) from about 0.5-5% by weight of a rubber; and (d) from about 30-45% by weight of an epoxy resin. *See* page 6 of the specification from lines 1 to 11 and example 3 on pages 13-14.

Independent claim 11 describes a composition useful for forming a reinforcing body. *See* specification page 1, lines 10-25; page 2, lines 7-15. The composition comprises from about 20-30% by weight of an SBS block co-polymer; from about 5-20% by weight polystyrene; from about 0.5-5% by weight of a rubber; and from about 30-45% by weight of an epoxy resin. *See* page 6 of the specification, lines 1-11. The composition has a percent expansion of from about 80-220% after heating thereof to a temperature of at least about 300°F. *See* page 8 of the specification, lines 9 to 19.

Independent claim 12 describes a composition useful for forming a reinforcing body. *See* specification page 1, lines 10-25; page 2, lines 7-15. The composition comprises from about 20-30% by weight of an SBS block co-polymer; from about 5-20% by weight polystyrene; from about 0.5-5% by weight of a rubber; and from about 30-45% by weight of an epoxy resin. *See* page 6 of the specification, lines 1-11. The composition has a compressive strength of at least

about 1400 psi upon being expanded by heating to a temperature of at least about 300°F. *See* page 8 of the specification, lines 9-19.

Independent claim 13 describes a composition useful for forming a reinforcing body. *See* specification page 1, lines 10-25; page 2, lines 7-15. The composition comprises from about 20-30% by weight of an SBS block co-polymer; from about 5-20% by weight polystyrene; from about 0.5-5% by weight of a rubber; and from about 30-45% by weight of an epoxy resin. The composition has a compressive strength of at least about 1400 psi and a percent expansion of from about 80-220% upon being expanded by heating to a temperature of at least about 300°F. *See* page 8 of the specification, lines 9-19.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. The final rejection of claims 1, 7, 11-13, 19 and 23-27 under 35 U.S.C. § 102 over WO 97/294490 (as translated in U.S. Patent No. 6,190,578, "Yokoyama").
2. The final rejection of claims 2, 4-6, 14 and 16-18 under 35 U.S.C. § 103 over WO 97/294490 (as translated in U.S. Patent No. 6,190,578, "Yokoyama") in view of U.S. Patent No. 5,755,486 ("Wycech").
3. The final rejection of claims 3 and 15 under 35 U.S.C. § 103 over WO 97/294490 (as translated in U.S. Patent No. 6,190,578, "Yokoyama") in view of U.S. Patent No. 5,755,486 ("Wycech") and in further view of U.S. Patent No. 5,782,730 ("Kawasaki").
4. The final rejection of claims 8-9 and 20-21 under 35 U.S.C. § 103 over WO 97/294490 (as translated in U.S. Patent No. 6,190,578, "Yokoyama") in view of U.S. Patent No. 5,755,486 ("Wycech") and in further view of U.S. Patent No. 4,692,475 ("Rowland").
5. The final rejection of claims 10 and 22 under 35 U.S.C. § 103 over WO 97/294490 (as translated in U.S. Patent No. 6,190,578, "Yokoyama") in view of U.S. Patent No. 5,755,486 ("Wycech") and in further view of U.S. Patent No. 5,782,730 ("Kawasaki") and U.S. Patent No. 4,692,475 ("Rowland") and U.S. Patent No. 5,021,513 ("Bagga").

VII. ARGUMENT

A. Ground of Rejection 1 (Final Rejection of Claims 1, 7, 11-13, 19 and 23-27 over Yokoyama) Should Be Reversed.

A claim is anticipated under 35 U.S.C. § 102 only if each and every element as set forth in the claim is either expressly or inherently described in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. MPEP § 2131 (*citing Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989), *overruled in part on other grounds, superseded by statute on other grounds*).

Each of the claims subject to Ground of Rejection 1 requires the elements, “from about 20%-30% by weight of an SBS block co-polymer; from about 5-20% by weight polystyrene; and from about 30-40% by weight of an epoxy resin.”

Yokoyama does not anticipate these claims because it does not disclose the claimed ingredients in combination with one another. The Examiner argues that Yokoyama discloses an organic binder that comprises SBS block copolymer, polystyrene (not as a separate ingredient, but as a constituent of SBS block copolymer), and epoxy resin. This argument is an admission that the reference cannot anticipate the claims because the claims expressly require the element of polystyrene (understood in the art to be a homopolymer) *in addition to the element of SBS block copolymer*. The Yokoyama reference simply does not disclose this combination of distinct ingredients, as evidenced by the fact that the composition “polystyrene” is not specifically identified anywhere in the 32 columns of the Yokoyama

reference.¹

Moreover, being a constituent of a chemical ingredient is not the same as being a separate chemical ingredient. Just as water has different properties from hydrogen and water, SBS block copolymer has different properties from the homopolymer polystyrene. Polystyrene is a tough, hard plastic that contributes to the durability of SBS. SBS can be stretched more readily than polystyrene, and SBS can retain its shape after being so stretched.

Yokoyama does anticipate these claims for the additional reason that it does not disclose the claimed ingredients in combination with one another *in the claimed weight percentages*. Again, the weight percentages of the rejected claims are “from about 20%-30% by weight of an SBS block co-polymer; from about 5-20% by weight polystyrene; and from about 30-40% by weight of an epoxy resin.”

Regarding the epoxy resin weight percentage, the Examiner has argued that 60% of the weight of the composition disclosed in Yokoyama is organic binder, which *can* comprise equal amounts of epoxy resin and SBS, which would then comprise 30% of the epoxy resin and 30% SBS. But Yokoyama does not disclose SBS and epoxy resin in equal amounts. Rather, it discloses a very broad range of ratios of organic binder to epoxy resin, generally showing a strong preference for a predominance of epoxy resin to SBS. For example, with respect to epoxy resin to SBS ratios, Yokoyama discloses only two: a 6:1 ratio in example 1 and a 7:1 ratio in example 13. So taking the Examiner’s first premise that the organic binder of Yokoyama is 60% of the weight of the total composition, and the Examiner’s second premise that the organic binder comprises only SBS and epoxy resin (the second premise

¹ Appellant notes that in column 8, line 33, a reference to a polystyrene resin (not to be confused with polystyrene) is made within a laundry list of chemicals.

was the case in example 1), then the weight percentage of epoxy resin to the entire composition would be 51.4%, which is outside of the claimed range of the rejected claims and therefore not anticipatory.

Regarding the SBS and polystyrene weight percentages, the Examiner's argument strays further from the disclosure of Yokoyama. The Examiner uses the 30% SBS (derived rather than disclosed, as explained above), and arbitrarily divvies that up into three separate weight percentages (24%, 5% and 1%), arguing that the SBS block copolymer is 24% of the total composition of Yokoyama, that SBS block copolymer [mis]characterized as the homopolymer polystyrene is 5% of the total composition, and the SBS block copolymer [mis]characterized as a distinct ingredient of rubber is 1% of the total composition. There is no support in Yokoyama for divvying up one ingredient and treating it as three distinct ingredients in Yokoyama, and there is certainly no support for arbitrarily assigning very specific weight percentages to those three ingredients as though they were disclosed.

Thus, for at least these reasons, the Yokoyama reference does not anticipate claims 1, 7, 11-13, 19 or 23-27, and this Board should reverse the final rejection of these claims.

B. Ground of Rejection 2 (Final Rejection of Claims 2, 4-6, 14 and 16-18 over Yokoyama in view of Wycech) Should Be Reversed.

1. Claims 2, 4-6, 14 and 16-18 Are Not Obvious over Yokoyama in view of Wycech

(a). The Examiner Failed To Establish A *Prima Facie* Case Of Obviousness

It is the Examiner's burden to set forth a *prima facie* case of obviousness in the initial or final Office Action. A *prima facie* case of obviousness has historically required that:

First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

MPEP § 2143 (Eighth Edition, Fifth Revision, August 2006) (*citing In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991)).

So long as the motivation requirement for a *prima facie* case of obviousness is not rigidly applied, requiring the Examiner to show proper reasoning for combining prior art references is consistent with *KSR International Co. v. Teleflex, Inc.*, 127 S.Ct. 1727 (2007). In *KSR*, the Supreme Court stated that, “[i]t can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does. This is so because inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known. *Id.* at 1741. Accordingly, the Court made clear that “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *Id.* at 1731.

(i). No Motivation to Combine References

Here, the Examiner failed to specify a proper motivation to combine Yokoyama with Wycech. Instead, after listing the acknowledged deficiencies in the Yokohama reference, the Examiner merely demonstrated that an independent reference, Wycech, listed claimed ingredients not disclosed in Yokoyama. Then, the Examiner argued, “One of ordinary skill in the art would therefore have recognized the advantage of providing for the additives of Wycech in Yokoyama et al, which comprises a composition comprising rubber, depending on the desired weight and strength of the end product.” (March 22, 2007 Non-Final Office Action, p. 4). The Examiner then concludes that the particularly claimed weight percentages would have been obvious “to obtain a composition having light weight and high strength characteristics as taught by Wycech. (*Id.* at p. 5)

This argument, however, fails to account for the fact that Yokoyama and Wycech are from non-analogous art fields. On one hand, Yokoyama teaches an anisotropic conductive composition used in panels of liquid crystal displays, plasma displays, and portable phones, among other things. Yokoyama addresses the problem of forming a composition that is insulative and has a high conductivity. On the other hand, Wycech teaches an expandable structural reinforcement material used in the automotive industry. Wycech addresses the prior art problems of making light-weight and high-strength structural reinforcing members for increasing the strength of automotive body structural members.

There is no reason one of ordinary skill and ordinary creativity in the art looking to improve on the anisotropic conductive composition of Yokoyama (the Examiner's primary reference) would turn to the expandable reinforcement materials disclosed in the unrelated Wycech reference. Similarly, there is no reason one of skill in the art looking to improve upon the reinforcement materials used in the auto industry would turn to the recipes for conductive compositions used for, among other things, personal electronics. This, Yokoyama and Wycech are an improper combination of references for an obviousness rejection, even under the standards of *KSR*.

(ii). If Combined, Yokoyama and Wycech Do Not Teach All Claim Elements

Even if combined, Yokoyama and Wycech still do not teach or suggest all the elements of Appellant's claims. The Examiner makes the argument that Yokoyama teaches SBS block co-polymer together with the homopolymer polystyrene and rubber and epoxy resin, and that Yokoyama teaches these distinct ingredients in the claimed weight percent ranges. This is inaccurate, as explained in detail above.

(b). If The Examiner Made A *Prima Facie* Case Of Obviousness,
Appellant Rebutted The *Prima Facie* Case

Appellant has found that the relative weight percentages of SBS block co-polymer with the homopolymer polystyrene and epoxy resin, when used in an expandable composition, bring about an unexpected result.

In particular, the homopolymer polystyrene acts a sponge for both SBS and epoxy resin. In other words, SBS and epoxy resin compete with one another for solubility in polystyrene. If too much SBS is included in the formulation, it displaces the epoxy resin from the polystyrene, and the resulting formulation does not have the desired traits for an expandable reinforcer composition that can adhere to the surface of a structural member. Similarly, if too little SBS is included, the expandable reinforcer composition does not have the desired mechanical properties, such as compressive strength. Thus, a specific balance is required among the ingredients. The claimed weight percentages are balanced to prevent too much leaking of epoxy resin out of the formulation by controlling the amount of SBS in the formulation relative to the epoxy resin. None of specific weight percentages among the distinctly claimed ingredients, or the ratio of weight percentages of the claimed ingredients, are taught or suggested by the combination of Yokoyama and Wycech.

Moreover, when the claimed formulation is expanded, Appellant achieved the surprising result that the particular combination of ingredients, in their relative amounts, led to a composition that both expanded to a high degree (80-220%) while maintaining such a high degree of compressive strength (at least about 1400 psi). (Specification page 8, lines 9-19). As explained in earlier amendments and an earlier appeal brief, this is surprising because one of skill in the art would expect that, the more the composition expands, the less likely it would be able to maintain such a compressive strength. The evidence supporting the previous arguments

is included in the Evidence Appendix.

For at least the reasons set forth hereinabove, this Board should reverse the final rejection of claims 2, 4-6, 14 and 16-18 under 35 U.S.C. § 103.

C. Ground of Rejection 3 (Final Rejection of Claims 3 and 15 over Yokoyama in view of Wycech and in further view of Kawasaki) Should Be Reversed.

This Final Rejection requires the combination of Yokoyama and Wycech, which for all the reasons set forth in detail, above, in Subsection A of the “ARGUMENT” Section is not a proper combination and does not teach all the elements of the independent claims from which dependent claims 3 and 15 depend. The Kawasaki reference does not cure any of the deficiencies of the Yokoyama reference, even if used in combination with Wycech. Thus, the combination of Yokoyama, Wycech and Kawasaki does not render obvious claim 3 or 15. Accordingly, this Board should reverse the Section 103 rejections of claims 3 and 15.

D. Ground of Rejection 4 (Final Rejection of Claims 8-9 and 20-21 over Yokoyama in view Wycech and in further view of Rowland) Should Be Reversed.

This Final Rejection requires the combination of Yokoyama and Wycech, which for all the reasons set forth in detail, above, in Subsection A of the “ARGUMENT” Section is not a proper combination and does not teach all the elements of the independent claims from which dependent claims 8-9 and 20-21 depend. The Rowland reference does not cure any of the deficiencies of the Yokoyama reference, even if used in combination with Wycech. Thus, the combination of Yokoyama, Wycech and Rowland does not render obvious claims 8-9 or 20-21. Accordingly, this Board should reverse the Section 103 rejections of claims 8-9 and 20-21.

E. Ground of Rejection 5 (Final Rejection of Claims 10 and 22 over Yokoyama in view of Wycech and in further view of Kawasaki and Rowland and Bagga) Should Be Reversed.

This Final Rejection requires the combination of Yokoyama and Wycech, which for all the reasons set forth in detail, above, in Subsection A of the “ARGUMENT” Section is not a

proper combination and does not teach all the elements of the independent claims from which dependent claims 10 and 22 depend. None of the Kawasaki reference, the Rowland reference, or the Bagga reference (alone or in combination) cures any of the deficiencies of the Yokoyama reference, even if used in combination with Wycech. Thus, the combination of five independent references does not render obvious claim 10 or 22. Accordingly, this Board should reverse the Section 103 rejections of claims 10 and 22.

Dated: March 6, 2008

Respectfully submitted,

By: /Linda D. Kennedy/

Linda D. Kennedy

Registration No.: 44,183

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VIII. CLAIMS APPENDIX

A clean copy of the claims of Application Serial No. 10/759,449 follows:

1. A composition useful for forming a reinforcing body, said composition comprising:
 - from about 20-30% by weight of an SBS block co-polymer;
 - from about 5-20% by weight polystyrene;
 - from about 0.5-5% by weight of a rubber; and
 - from about 30-45% by weight of an epoxy resin.
2. The composition of claim 1, said composition further comprising from about 0.5-5% by weight of a pigment.
3. The composition of claim 1, said composition further comprising from about 1-10% by weight hydrated amorphous silica.
4. The composition of claim 1, said composition further comprising from about 10-20% glass microspheres.
5. The composite of claim 1, said composition further comprising from about 0.1-5% by weight of a blowing agent.
6. The composition of claim 1, said composition further comprising from about 0.1-

5% by weight of a catalyst.

7. The composition of claim 1, said composition further comprising from about 0.1-5% by weight of a curing agent.

8. The composition of claim 1, said composition further comprising a compound for lowering the blowing temperature of the composition.

9. The composition of claim 1, wherein said rubber is a nitrile-butadiene rubber and said epoxy resin is a bisphenol A-based liquid epoxy resin, and said composition further comprises:

from about 0.5-5% by weight of a pigment;

from about 1-10% by weight hydrated amorphous silica;

from about 10-20% by weight glass microspheres;

from about 0.1-5% by weight of a blowing agent;

from about 0.1-5% by weight of a catalyst;

from about 0.1-5% by weight of a curing agent; and

up to about 5% by weight of a compound for lowering the blowing temperature of the composition.

10. The composition of claim 9, wherein said pigment comprises carbon black, said blowing agent comprises azodicarbonamide, said catalyst comprises N,N-dimethyl phenyl urea, said curing agent comprises dicyandiamide, and said compound for lowering the blowing temperature comprises zinc oxide.

11. A composition useful for forming a reinforcing body, said composition comprising:

from about 20-30% by weight of an SBS block co-polymer;

from about 5-20% by weight polystyrene;

from about 0.5-5% by weight of a rubber; and

from about 30-45% by weight of an epoxy resin,

wherein said composition has a percent expansion of from about 80-220% after heating thereof to a temperature of at least about 300°F.

12. A composition useful for forming a reinforcing body, said composition comprising:

from about 20-30% by weight of an SBS block co-polymer;

from about 5-20% by weight polystyrene;

from about 0.5-5% by weight of a rubber; and

from about 30-45% by weight of an epoxy resin,

wherein said composition has a compressive strength of at least about 1400 psi upon being expanded by heating to a temperature of at least about 300°F.

13. A composition useful for forming a reinforcing body, said composition comprising:

from about 20-30% by weight of an SBS block co-polymer;

from about 5-20% by weight polystyrene;

from about 0.5-5% by weight of a rubber; and

from about 30-45% by weight of an epoxy resin,

wherein said composition has a compressive strength of at least about 1400 psi and a percent expansion of from about 80-220% upon being expanded by heating to a temperature of at least about 300°F.

14. The composition of claim 13, said composition further comprising from about 0.5-5% by weight of a pigment.

15. The composition of claim 13, said composition further comprising from about 1-10% by weight hydrated amorphous silica.

16. The composition of claim 13, said composition further comprising from about 10-20% glass microspheres.

17. The composite of claim 13, said composition further comprising from about 0.1-5% by weight of a blowing agent.

18. The composition of claim 13 said composition further comprising from about 0.5-5% by weight of a catalyst.

19. The composition of claim 13, said composition further comprising from about 0.1-5% by weight of a curing agent.

20. The composition of claim 13, said composition further comprising a compound for lowering the blowing temperature of the composition.

21. The composition of claim 13, wherein said rubber is a nitrile-butadiene rubber and said epoxy resin is a bisphenol A-based liquid epoxy resin, and said composition further comprises:

from about 0.5-5% by weight of a pigment;

from about 1-10% by weight hydrated amorphous silica;

from about 10-20% by weight glass microspheres;

from about 0.1-5% by weight of a blowing agent;

from about 0.1-5% by weight of a catalyst;

from about 0.1-5% by weight of a curing agent; and

up to about 5% by weight of a compound for lowering the blowing temperature of the composition.

22. The composition of claim 21, wherein said pigment comprises carbon black, said blowing agent comprises azodicarbonamide, said catalyst comprises N,N-dimethyl phenyl urea, said curing agent comprises dicyandiamide, and said compound for lowering the blowing temperature comprises zinc oxide.

23. A composition of claim 13 wherein the percent expansion is from about 95% to about 200%.

24. A composition of claim 23 wherein the compressive strength is at least about 1600 psi.
25. A composition of claim 13 wherein the percent expansion is from about 129% to about 147%.
26. A composition of claim 25 wherein the compressive strength is from about 1422 psi to about 2129 psi.
27. A composition of claim 25 wherein the compressive strength is at least about 1600 psi.

IX. EVIDENCE APPENDIX

Declaration 1 of Chin-Jui Chang, dated October 16, 2002, filed in the parent case, serial no. 09/572,754, and included in the August 16, 2006 Appeal Brief Evidence Appendix filed in the case presently on appeal.

Declaration 2 of Chin-Jui Chang, dated October 16, 2002, filed in the parent case, serial no. 09/572,754, and included in the August 16, 2006 Appeal Brief Evidence Appendix filed in the case presently on appeal.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:

CHANG, CHIN-JUI et al.

Serial No.: 09/572,754

Filed: May 16, 2000

SOUND DEADENING AND STRUCTURAL
REINFORCEMENT COMPOSITIONS AND
METHODS OF USING THE SAME

Docket No.: 26845-B

Group Art Unit No.: 1772

Examiner: M. Patterson

Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

DECLARATION 1

1. CHIN-JUI CHANG, declare and state as follows:

1. I am one of the inventors named on the above-referenced patent application. I am a group leader in the Structural Materials section of Sika Corporation.

2. Under my direction and control, the composition set forth in Table 1 of this Declaration was used to prepare a composition following the procedures described in the text of U.S. Patent No. 5,755,486 to Wycech which was cited by the Examiner in the second office action of this application. The percent expansion and compressive strength of the Wycech composition was determined and is reported in Table 1 below. The composition reported in Table 1 corresponds exactly to the preferred formulation of Table 1 in the Wycech '486 patent.

Ingredient	Trade Name	Composition
Epoxy Resin	Araldite 6010 ¹	50.45% ²
Acrylonitrile-Butadiene Rubber	Nipol 1312 LV	4.33%
Calcium Carbonate	Winnifil SPT	5.31%
Carbon Black	Black Powder	0.13%
Fumed Silica	Cab-O-Sil TS720	3.55%
High Strength Glass Spheres	B38	22.4%
Curing Agent	Dicyandiamine G	4.33%
Accelerator	Amicure UR	1.29%
Blowing Agent	Celogen OT	0.71%
Volume Expansion, %		44.0% \pm 0.1
Compressive Strength, psi		1131.0 psi \pm 142.2

¹ A liquid bisphenol-A based epoxy resin.

² These percentages by weight correspond to the percentages by weight given in Table 1 of the Wytech patent.

3. These data clearly demonstrate that the compositions taught by Wytech do not exhibit sufficient volumetric expansion or compressive strength for use in structural reinforcement applications according to the invention. Wytech does not disclose a reinforcing composition which has a percent expansion of from about 80-220% as is recited by claims 11, 16, and 18 of the patent application. Furthermore, Wytech does not disclose a composition having a compressive strength of at least about 1400 psi as is recited by claim 12 and 17 of the patent application. By comparison, the present application discloses a compressive strength of at least about 1400 psi on page 8, line 24, and a percent expansion of

from about 80-220% on page 8, line 17. A specific example is provided in Example 3 which provides a composition meeting all of the claim limitations of the independent claims.

I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that wilful, false statements and the like are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and such wilful false statements may jeopardize the validity of any patents issued from the parent application.

Any additional fee which is due in connection with this Declaration should be applied against Deposit Account No. 19-0522.


Chin-Jui Chang

Date: 10-16-2002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:

CHANG, CHIN-JUI et al.

Serial No.: 09/572,754

Filed: May 16, 2000

SOUND DEADENING AND STRUCTURAL
REINFORCEMENT COMPOSITIONS AND
METHODS OF USING THE SAME

Docket No.: 26845-B

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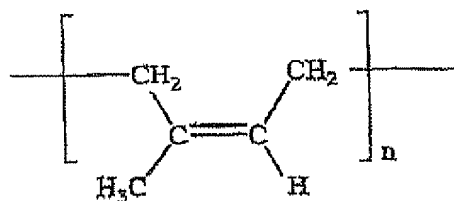
Assistant Commissioner of Patents
Washington, D.C. 20231

Sir:

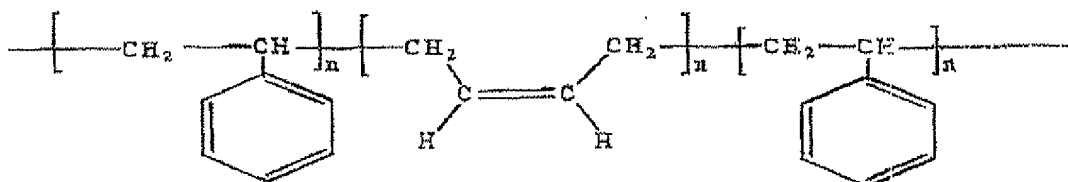
DECLARATION 2

I, CHIN-JUI CHANG, declare and state as follows:

1. I am one of the inventors named on the above-referenced patent application. I am a group leader in the Structural Materials section of Sika Corporation.
2. Polyisoprene and SBS Block copolymer are fundamentally dissimilar because polyisoprene is a diene rubber that is a vulcanizable elastomer while SBS Block copolymer is a thermoplastic elastomer. Vulcanizable elastomers must be crosslinked by heating to provide strength and toughness, and are soft at room temperature. SBS Block copolymer can be handled like a thermoplastic elastomer and provides strength and toughness at room temperature without vulcanization. Upon cooling, SBS Block copolymer becomes hard and plastic. The structures of polyisoprene and SBS Block copolymer are as follows:



Polyisoprene



SBS Block copolymer

3. As is evident from these structures, SBS Block copolymer and polyisoprene are structurally very dissimilar. The structural characteristics of the SBS Block copolymer and polyisoprene clearly impart functional properties that are not consonant with one another. This is critical to an appreciation of why polyisoprene and SBS Block copolymer are not interchangeable for use in the present application. SBS Block copolymer is not covalently bonded, while polyisoprene is covalently bonded. Polyisoprene must undergo a chemical process of crosslinking called vulcanization which results in a homopolymer having covalent bonds. The polymer process for SBS Block copolymer is reversible unlike that for vulcanized polyisoprene. In contrast, SBS Block copolymer is unique because it is not chemically crosslinked. Therefore, it is more easily processed and can be shaped more readily. By virtue of being a thermoplastic elastomer, SBS Block copolymer has two distinct phases that cause it to become fluid and rubbery at higher temperatures and hard and plastic at lower temperatures, making SBS Block copolymer ideal for use in structural foams for reinforcing hollow bodies. Polyisoprene lacks such characteristics and properties.

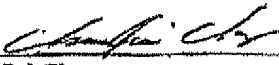
4. I further declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that wilful, false statements and the like are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and such wilful false statements may jeopardize the validity of any patents issued from the patent application.

Serial No. 09/572,754

Docket No. 26845-B

Any additional fee which is due in connection with this Declaration should be applied against

Deposit Account No. 19-0522.


Chin-Jui Chang

Date: 10-16-2002

X. RELATED PROCEEDINGS APPENDIX

No related proceedings are referenced in Section II above. There are no decisions in related proceedings to include. Thus, this Appendix is included, but has no contents.